Quality Criteria for the evaluation of the SUNRAISE Outputs

Quality control and monitoring procedures started at the beginning of the project. The project team has developed Quality Assurance Plan (QAP). The steering group (SG) approved it during the Kick Off meeting. The special OMSE site with different tools for the QA monitoring and fulfilment of the QAP was developed and maintained in the internal management platform.
QAP defines the project's quality objectives and the procedures for achieving those objectives. The project coordinator established the Quality Control Matrix (QCM) including the indicators described in the LFM to measure the projects progress in a quantifiable way. The QCM is an online tool that is integrated in the project management platform. It allows the monitoring for all project activities and management of the project outcomes. The project partners were trained to use QCM during the Kick-Off meeting.

Promotion of sustainable management of Arctic and high mountainous ecosystems in Bhutan, India and Russia through enhanced tertiary education linked to labour markets and wider stakeholder circles

The principal outcomes and outputs are:

- updated Curricula with new Syllabi

- new Textbooks, guidelines

- development of PhD research framework and supplementary documents

- new eLearning Materials, based on innovative teaching strategies and creative learning approaches, such as: Research Based Learning; eScience approach; Collaborative/ Personal Learning Environment;

- MOOCs for LLL.

European Qualifications Framework for Higher Education (Dublin Descriptors), as well as the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) are used for Internal and external quality assurance of CMSE study programs and involves the external stakeholders in these activities.
All courses are evaluated according Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) and EQUASP Standards and Guidelines for internal Quality Assurance of Study Programmes (EQUASP Model)

For the assessment of study programs and teaching and learning materials we use the methodology suggested in the EU Tempus project EQUASP:ON-LINE QUALITY ASSURANCE OF STUDY PROGRAMMES" (543727-TEMPUS-1-2013-1-IT-TEMPUS-SMGR) http://equasp.tstu.ru/ . Standards and Guidelines for Quality Assurance of Study Programs and Documentation for Quality Assurance of Study were developed in this project. One of the partners in this project

SPbPU, is also partner in SUNRAISE project. Template for curricular in terms of Bologna tools was developed according these guidelines.
We also used the results of IQMHE project "Internal Quality Management in Competence-Based Higher Education" https://iqmhe.wordpress.com

The assessment of the dissemination and sustainability activities is done regularly.
The most important project deliverables, such as Syllabi, TLM are evaluated in several steps.
- internal evaluation, that is done by the experts in the University that have developed the TLM;
- cross –peer evaluation, by other project partners;
- external evaluators (Industry experts).
The criteria for the selection of the experts is based on the current publications in the relevant field and practical skills. The developed TLM will be used during the 3 semesters and summer schools and evaluated by lectures and students in PC. The evaluation would be ready in the end of semester. It will be analyzed by Quality Assurance Team and after it the Syllabi and TLM will be reviewed and improved.

Syllabi and updated Curricula

Quality Criteria for the developed courses is the successful accreditation of the Syllabi and updated Curricula. That insures that all international standards mentioned above are fulfilled by the development of the new courses. The positive evaluation from the stakeholders insures that the developed courses are really corresponds with the labour market demands.

Quality criteria used:

- Number of credit units for lecture, practical and self searning are appropriate to the contents;
- Total number of credit units in the course is correct and appropriate;
- Positioning of the courses in Curricula is appropriate based on the progressive level of difficulty;
- Tests are suitable and appropriate to support transferable skills;
- TLM and assessment strategy support students in undertaking the course i.e. prerequisites are helpful and relevant, assessments helps gauge students understanding etc.;
- Theory/Practice-oriented components are sufficient to cater the learning outcomes and skills development.

Textbooks, Training Manual and Guidelines

Quality criteria used:

The objectives of the Guidelines

- The goal of the book is formulated as the achievements of students on a specific academic discipline for a specific task or specialty;

- Objectives correspond to external discipline requirements-the requirements of employers (national and international)
- Objectives correspond to external-discipline requirements principles regulated documents of the Bologna process

Recommendations on working for students

- Possible ways of studying the material of the manual are discussed (recommendations for planning the work with the manual)
- There is a structure (navigator) of the edition in graphic form
-

Tasks

- Tasks are determined by the goals
- Tasks are within context for future professional activity
- Allocated standard assignments and tasks of high complexity
-

Student support materials

- The structure and content of the textbook correspond to the goals of the book
- The structure and content of the textbook reflect a certain author's position
- The concepts and terms used are defined (in the text or in the glossary), the relationship between them is established
- The main ("core") and additional material are allocated
- Stand out productive solutions to proposed problems, issues, tasks, which can be used for solving problems in various subject areas
- Different presentation of the same information (text, formula, table, diagram, illustration, graphic) are used.
- Examples of assignments are discussed
- Present materials to address the gaps in initial training
- Language easy to understand, concise, shaped to learner's personality
- The text materials of the guidelines are reflected in OMSE and contain links to the additional materials (special software, materials of high difficulty levels) that are present in OMSE

Tests &Assesments

- Provides a variety of assignments for self-monitoring

List of recommended literature

- State out the primary and secondary literature

Improvement of local infrastructure at the PC universities

Quality criteria used:

- The equipment and learning facilities are sufficient for the organization of learning process
- The number of working places and software licenses allows the simultaneous work of the group of students
- Students have internet access to use SUNRAISER and other resources
- Equipment for development of new multi-media courses and video educational resources is available

SUNRAISER implementation

Quality criteria used:

- SUNRAISER is available and can be used by students and staff
- Manuals for students and staff are available and evaluated.
- Number of Staff using SUNRAISER
- Number of Students using SUNRAISER
- Evaluation of Feedback

eLearning multimedia modules

Quality criteria used:

The interface and navigation

- Usability
- Intuitive
- User friendly interface
- Logic of navigation of portal site

Multimedia components, illustrations, graphical elements

- Quality of graphic material
- Availability of video-lectures

Information characteristics

- Information content of electronic modules
- Relevance, originality, scientific content of modules
- Practical significance of modules
- Focus on the final result of training

Structure of modules

- Presence of contents (sections) and schedule
- Availability of lectures
- Availability of Presentations

- Availability of multimedia content
- Availability of virtual labs (practice)
- Availability of tests and assessments

Functionality of modules

- Availability/use of content creation tools
- Availability/use of monitoring tools of educational process
- Availability/use of communication tools
- Use of active zones, buttons controls, hyperlinks, etc.

Development of modules and their performance

- Availability of program documentation
- Helpful warnings, system messages, suggestions for further work in the event of problem, etc.
- The compatibility with different IT and operating systems
- Compatibility with all major browsers (Mozilla, Google Chrome, Internet Explorer)

Students Summer school and Teaching during Semester

Quality criteria used:

- Objectives correspond to the educational goals
- The program was Quality of lectures
- How effective were the practical training sessions
- The balance between lectures, practical lessons and self learning components
- The program correlated with the level of basic knowledge. They were sufficient for understanding the new materials and lectures.
- Team work
- Communication between students in groups
- Communication between students and lectures /tutors

Dissemination activities

- relevance of the Web Page
- regular information of stakeholders and target groups via workshops
- compliance of information with the needs of stakeholders and target groups
- scope of different target groups
- information of the target groups via publications in journals, participation in conferences
- information in social networks

Basic documents used for the quality assurance

- ESG ENQA - Standards and guidelines for quality assurance in the European Higher Education Area (ESG - European Standards and Guidelines) developed by ENQA (European Network for Quality Assurance) https://enqa.eu/index.php/home/esg/
- A Framework for Qualifications of the European Higher Education Area http://www.aic.lv/ace/ace_disk/Bologna/Bergen_conf/Reports/EQFreport.pdf
- National (Russian) Qualifications Framework https://connections.etf.europa.eu/wikis/home?lang=en#!/wiki/Wf591e43b607e_4ccf_8d94_a3256a255147/page/Russian%20Federation%20-%20NQF%20Inventory
- EUR-ACE Framework Standards and Guidelines (EAFSG) http://www.enaee.eu/wp-assets-enaee/uploads/2012/02/EAFSG_full_nov_voruebergehend.pdf
- European Network for Accreditation of Engineering Education (ENAEE), «EUR-ACE Framework Standards for the Accreditation of Engineering Programmes» www.enaee.eu
- TUNING Educational Structures in Europe, A Guide to Formulating Degree Programme Profiles, Including Programme Competences and Programme Learning Outcomes http://www.unideusto.org/tuningeu/publications.html
- Erasmus+ project “Internal Quality Management: Evaluating and Improving Competence-Based Higher Education” (IQM-HE) http://www.iqm-he.eu/
- Tempus project EQUASP:ON-LINE QUALITY ASSURANCE OF STUDY PROGRAMMES” (543727-TEMPUS-1-2013-1-IT-TEMPUS-SMGR) http://equasp.tstu.ru/
- Quality Standards ISO9000